

### **ABSTRACT OF THE DISCLOSURE**

An apparatus for detecting cardiac events in electrograms has a feature extraction unit that derives features of the cardiac events for discriminating among different types of cardiac events. A clustering unit  
5 groups cardiac events with similar features into respective clusters defined by predetermined cluster features. The feature extraction unit determines a feature vector describing waveform characteristics of cardiac events in the electrogram by a wavelet transform. The clustering unit determines the distance between the feature vector and corresponding cluster feature vectors  
10 in order to assign the cardiac event in question to that cluster which results in a minimum distance, providing that the minimum distance is less than a predetermined threshold value. A heart stimulator provided with such a cardiac event detecting apparatus detects the occurrence of an arrhythmia and appropriately controls a pulse stimulator to treat the arrhythmia.